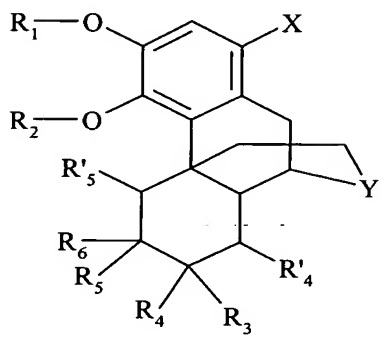
CLAIMS

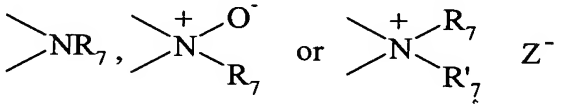
We claim :

1. A compound selected from those of formula (I) :



(I),

wherein

- R_1 represents alkyl,
- R_2 represents hydrogen or alkylcarbonyl, haloalkylcarbonyl or arylcarbonyl,
- Y represents a group  wherein R_7 and R'_7, identical or differents, each represent alkyl and Z^- represents halogen anion,
- R_3 represents hydroxy or alkoxy,
- R_4 and R'_4 each represent hydrogen or together form an additional bond, or R_3 and R_4 together form oxo or $=N\text{-}OR_8$ (wherein R_8 represents hydrogen or alkyl),
- R_6 represents hydroxy, alkylcarbonyloxy (wherein the alkyl moiety can be substituted by hydroxy, alkoxy, carboxy or alkyloxycarbonyl) or alkoxy,
- R_5 and R'_5 each represent hydrogen or together form an additional bond, or R_5 and R_6 together form oxo, $=N\text{-}OR_9$ or $=N\text{-}NR_{10}R_{11}$ (wherein R_9, R_{10}, and R_{11}, which may be the same or different, each represent hydrogen or alkyl),

- and X represents halogen,

with the proviso that the compound of formula (I) cannot represent 1-bromo-4-hydroxy-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-6-one,

it being understood that

- "alkyl" means an alkyl group containing 1 to 6 carbon atoms which may be linear or branched,
- "alkoxy" means an alkyloxy group containing 1 to 6 carbon atoms which may be linear or branched,

its enantiomers and diastereoisomers, and addition salts thereof with a pharmaceutically-acceptable acid or base.

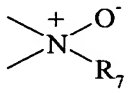
2. A compound according to claim 1, wherein R_1 represents methyl.

3. A compound according to claim 1, wherein R_2 represents hydrogen.

4. A compound according to claim 1, wherein R_2 represents alkylcarbonyl.

5. A compound according to claim 1, wherein R_2 represents ethylcarbonyl.

6. A compound according to claim 1, wherein Y represents NR_7.

7. A compound according to claim 1, wherein Y represents  .

8. A compound according to claim 1, wherein X represents chlorine.

9. A compound according to claim 1, wherein X represents bromine.

10. A compound according to claim 1, wherein R_3 represents alkoxy.

11. A compound according to claim 1, wherein R_5 represents hydrogen.

12. A compound according to claim 1, wherein R_6 represents OH.

13. A compound according to claim 1, wherein R_6 represents alkylcarbonyloxy.

14. A compound according claim 1, wherein R_5 and R_6 together form oxo.

15. A compound according claim 1, wherein R_5 and R_6 together form $=N-OH$.

16. A compound according to claim 1 which is selected from (9α,13α)-1-chloro-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-4,6-diol and addition salts thereof with a pharmaceutically-acceptable acid or base.

17. A compound according to claim 1 which is selected from (9α,13α)-1-chloro-3,7-dimethoxy-17-methyl-4-(propionyloxy)-7,8-didehydromorphinan-6-yl propionate and addition salts thereof with a pharmaceutically-acceptable acid or base.

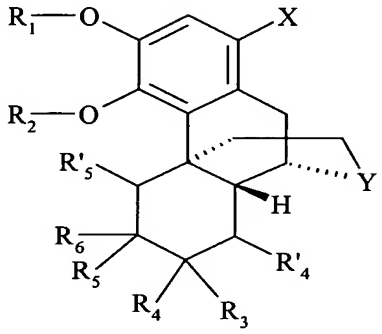
18. A compound according to claim 1 which is selected from (9α,13α)-1-bromo-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-4,6-diol and addition salts thereof with a pharmaceutically-acceptable acid or base.

19. A compound according to claim 1 which is selected from (9α,13α)-1-bromo-4-hydroxy-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-6-one oxime and addition salts thereof with a pharmaceutically-acceptable acid or base.

20. A compound according to claim 1 which is selected from (9α,13α)-1-bromo-4-hydroxy-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-6-one N-oxide and addition salts thereof with a pharmaceutically-acceptable acid or base.

21. A compound according to claim 1 which is selected from (9α,13α)-1-chloro-4-hydroxy-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-6-one N-oxide and addition salts thereof with a pharmaceutically-acceptable acid or base.

22. A compound according to claim 1, having the configuration shown by formula (I') :



(I')

and addition salts thereof with a pharmaceutically-acceptable acid or base.

23. A method for treating a living body afflicted with deficiencies of memory associated with cerebral ageing and with neurodegenerative diseases such as Alzheimer's disease, Parkinson's disease, Pick's disease, Korsakoff's disease, and frontal lobe and subcortical dementias comprising the step of administering to the living body an amount of a compound of claim 1 which is effective for the alleviation of said disorder.

24. A pharmaceutical composition useful for treating the deficiencies of memory associated with cerebral ageing and with neurodegenerative diseases such as Alzheimer's disease, Parkinson's disease, Pick's disease, Korsakoff's disease, and frontal lobe and subcortical dementias, comprising as active principale an effective amount of a compound of claim 1 together with one or more pharmaceutically-acceptable excipients or vehicles.

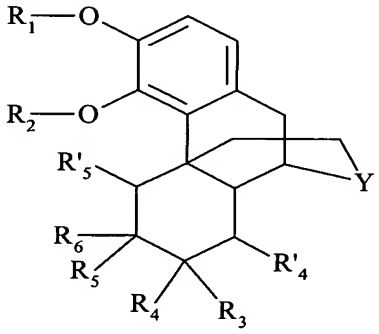
25. Use of sinomenine and/or sinomenine compounds in obtaining pharmaceutical compositions intended for the treatment of deficiencies of memory associated with

cerebral ageing and with neurodegenerative diseases such as Alzheimer's disease, Parkinson's disease, Pick's disease, Korsakoff's disease, and frontal lobe and subcortical dementias.

26. Use, according to claim 25, of sinomenine in obtaining pharmaceutical compositions intended for the treatment of deficiencies of memory associated with cerebral ageing and with neurodegenerative diseases such as Alzheimer's disease, Parkinson's disease, Pick's disease, Korsakoff's disease, and frontal lobe and subcortical dementias.

27. Use, according to claim 25, of sinomenine compounds in obtaining pharmaceutical compositions intended for the treatment of deficiencies of memory associated with cerebral ageing and with neurodegenerative diseases such as Alzheimer's disease, Parkinson's disease, Pick's disease, Korsakoff's disease, and frontal lobe and subcortical dementias.

28. Use, according to claim 25, of sinomenine compounds selected from those of formula (Ia) :



(Ia),

wherein R_1, R_2, R_3, R_4, R'_4, R_5, R'_5, R_6 and Y are as defined in claim 1, in obtaining pharmaceutical compositions intended for the treatment of deficiencies of memory associated with cerebral ageing and with neurodegenerative diseases such as Alzheimer's disease, Parkinson's disease, Pick's disease, Korsakoff's disease, and frontal lobe and subcortical dementias.

29. Use, according to claim 25, of sinomenine compounds selected from (9α,13α)-4-hydroxy-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-6-one hydrazone; (7α,9α,13α)-4-hydroxy-3,7-dimethoxy-17-methylmorphinan-6-one; (7β,9α,13α)-4-hydroxy-3,7-dimethoxy-17-methylmorphinan-6-one; (9α,13α)-3,7-dimethoxy-17-methyl-6-oxo-7,8-didehydromorphinan-4-yl propionate; (9α,13α)-3,4,7-trimethoxy-17-methyl-7,8-didehydromorphinan-6-one; (9α,13α)-4-hydroxy-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-6-one oxime; (9α,13α)-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-4,6-diol; (9α,13α)-4-hydroxy-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-6-one N-oxide; (9α,13α)-6-amino-3,7-dimethoxy-17-methylmorphinan-4-ol; 4-{[(9α,13α)-4-hydroxy-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-6-yl]oxy}-4-oxobutanoic acid; (9α,13α)-3,7-dimethoxy-17-methyl-4-(propionyloxy)-7,8-didehydromorphinan-6-yl propionate (9α,13α)-17-benzyl-4-hydroxy-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-17-ium-6-one bromide; (9α,13α)-17-ethyl-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-17-ium-4,6-diol bromide; (9α,13α)-17-ethyl-4-hydroxy-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-17-ium-6-one bromide; (9α,13α)-4-(benzoyloxy)-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-6-yl benzoate; (9α,13α)-4-hydroxy-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-6-yl benzoate; (9α,13α)-6-hydroxy-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-4-yl benzoate, in obtaining pharmaceutical compositions intended for the treatment of deficiencies of memory associated with cerebral ageing and with neurodegenerative diseases such as Alzheimer's disease, Parkinson's disease, Pick's disease, Korsakoff's disease, and frontal lobe and subcortical dementias.

30. A pharmaceutical composition for use in the treatment of deficiencies of memory associated with cerebral ageing and with neurodegenerative diseases such as Alzheimer's disease, Parkinson's disease, Pick's disease, Korsakoff's disease, and frontal lobe and subcortical dementias comprising sinomenine or a sinomenine compound, in combination with one or more pharmaceutically-acceptable excipients or vehicle.